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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,763	06/05/2006	Vincenzo De Leo	SER-105	2323

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EXAMINER	
BORGEEST, CHRISTINA M	

ART UNIT	PAPER NUMBER
1649	

NOTIFICATION DATE	DELIVERY MODE
10/29/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

euspto@slspatents.com

Office Action Summary	Application No.	Applicant(s)	
	10/565,763	DE LEO ET AL.	
	Examiner	Art Unit	
	Christina Borgeest	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12,16-28 and 30-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,16-28 and 30-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 August 2009 has been entered.

Formal Matters

The amendment filed 19 August 2009 is acknowledged. Claims 12, 17-28 are amended. Claims 14, 15 and 29 are cancelled. Claims 30-43 are new. Claims 12, 16-28 and 30-43 are under examination.

Rejections Withdrawn

Claim Rejections - 35 USC § 102

The rejection of claims 12, 14-27 and 29 under 35 U.S.C. 102(b) as being anticipated by Foresta et al. (Fertil Steril. 2002, 77: 238-244—of record) as set forth at pages 3-5 is withdrawn in response to Applicants' amendment and cancellation of claims 14, 15 and 29. Specifically, Applicants have amended their claims to recite XX or YY disomy and McInnes et al. report at Table III, p. 2789, that there was no

significant difference in the percentage of XX or YY disomy in infertile male patients. Foresta et al. teach administration of 100 IU of FSH to patients suffering from mild oligozoospermia without maturation disturbances, and such this patient population does not clearly overlap with a patient population having gamete numerical chromosomal alterations, in which the alteration is XX or YY disomy.

The rejection of claims 12, 14-27 and 29 under 35 U.S.C. 102(b) as being anticipated by Acosta et al. (Fertil Steril. 1991; 55: 1150-6) as set forth at pages 5-7 is withdrawn in response to Applicant's amendment and cancellation of claims 14, 15 and 29. Specifically, Applicants have amended their claims to recite XX or YY disomy and McInnes et al. report at Table III, p. 2789, that there was no significant difference in the percentage of XX or YY disomy in such patients (though there was a significant increase in XY disomy).

Rejections/Objections

Claim Objections

Claims 12 and 31 are objected to because of the following informalities: For the sake of clarity, "follicle stimulating hormone" should be written out followed by "FSH" in parentheses in the independent claims. Appropriate correction is required.

Claim 30 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 30, which depends from claim 12, recites “gamete numerical chromosomal alterations” broadly, but amended claim 12 is now recites patients having gamete numerical chromosomal alterations limited to XX or YY disomy. It is not clear how claim 30 limits claim 12; especially since it is inherent in claim 12 that the male is already diagnosed with gamete numerical chromosomal alterations.

Claim 40 is objected to because of the following informalities: Claim 40 recites “15 (currently amended).” at the end of the claim (after "FSH glycosylation variant."), which is presumably a typo. Appropriate correction is required.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12, 16-28 and 30-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 12 and 31 are indefinite in the alternative use of "and/or" because it is not clear what controls which of these limitations. See MPEP § 2173.05(h). Claims 16-28, 30 and 32-43 are indefinite because they depend from an indefinite claim.

Claim 25 recites the limitation "the substance" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Claim 12, from which claim 25 depends, does not recite the term “substance”.

Claim Rejections - 35 USC § 112, first paragraph—Scope of Enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12, 16-28 and 30-43 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the claimed methods of administering FSH or an FSH variant, wherein said variant is recombinant FSH (rFSH) or CTP-FSH does not reasonably provide enablement for the FSH variants as broadly recited. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." (See In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 Fed. Cir. 1988) These factors include, but are not limited to: (a) the breadth of the claims; (b) the nature of the invention; (c) the state of the prior art; (d) the level of one of ordinary skill; (e) the level of predictability in the art; (f) the amount of direction provided by the inventor; (g) the

existence of working examples; and (h) the quantity of experimentation needed to make or use the invention based on the content of the disclosure.

(i) The first issue concerns the breadth of the phrase "FSH variant" in the claims. Some FSH variants are antagonistic in their activity. For instance, Timossi et al. (Neuroendocrinology. 1998; 67: 153-63) teach in their abstract that, "[it] is well known that deglycosylation of gonadotropins by enzymatic or chemical procedures or by deletion of sites for N-linked glycosylation produces antagonistic analogs which are able to interact strongly with the receptor and to inhibit binding of the wild-type hormone." Barrios-De-Tomasi et al. (Mol and Cell Endocrinol. 2002; 186: 189-198) teach an isoform of FSH that "exhibited antagonistic effects on FSH action." (See p. 192, left column, 2nd paragraph). U.S. Patent No. 5,883,073 (Boime et al.) discloses how to make single chain FSH variants with antagonist activities. Given that the nature of the invention is to treat men with infertility, administration of an antagonist of FSH would not be expected to be effective, since experiments in which FSH was blocked resulted in male infertility (see Foresta et al.—of record, p. 238, left column, 1st and 2nd paragraphs). Further, Foresta et al. teach that "there is a general consensus on the need for FSH in the regulation of [spermatogenesis]." This segues into the second issue, the nature of the invention.

(ii) The nature of the invention, namely, treatment of male infertility (i.e. reduction of gamete chromosomal abnormalities) is complex. Foresta et al. (of record) teach the complexity of oligozoospermia (low sperm count), at p. 241, right column, 2nd paragraph: "oligoozoospermia represents the end point of various alterations of the

seminferous epiethelium, including tubular depopulation or maturative abnormalities at different levels of the spermatogenesis process." In other words, there is a high degree of variability in the etiology of the single outcome of oligozoospermia. Further, Acosta et al. (of record) report that many oligozoospermic males do not experience positive in vitro fertilization (IVF) outcomes (see p. 1150, left column). In summary, the art provides evidence of the complex issues surrounding the treatment of male infertility. As noted above, since experiments have shown that FSH blockade resulted in declining male fertility and impairment of testicular function, an FSH variant with antagonist properties, which is encompassed by the claims, would not be expected to successfully treat male infertility.

(iii) The third issue is the guidance or direction provided by the inventors. The specification briefly touches upon some examples of FSH variants at pages 10-11, such as CTP-FSH and rFSH. Nevertheless, FSH variant is broadly defined in the specification as encompassing "those molecules differing in amino acid sequence, glycosylation pattern or inter-subunit linkage from human FSH but exhibiting FSH-activity. As noted above under (i), the art reports glycosylation, amino acid and single chain FSH variants having antagonistic activity. For instance, the isoform discussed in Barrios-De-Tomasi et al. (cited above) has some FSH activity in cAMP production, but it "profoundly inhibited FSH-induced aromatase and tPA enzyme activity." (See p. 192 of Barrios-De-Tomasi et al., left column, last paragraph). Thus even the definition in the specification requiring FSH activity does not limit the variants to operable embodiments, since some antagonists can have dual agonist and antagonist activity. The broad use

and definition of FSH variant in the instant claims and specification is not commensurate in scope with evidence in the art showing the ability of some FSH variants to antagonize the actions of FSH.

Due to the large quantity of experimentation necessary to determine if FSH variants with antagonistic activity would be useful in treating or reducing gamete numerical chromosomal alterations in males, the lack of direction/guidance presented in the specification regarding and the absence of working examples directed to the same, the complex nature of the invention, the state of the art which teaches many FSH variants that antagonize FSH activity, (the level of skill of those in the art), the unpredictability regarding whether such antagonists could be used to treat or reduce gamete numerical chromosomal alterations in males, and the breadth of the claims which fail to recite limitations on FSH variants, undue experimentation would be required of the skilled artisan to make and/or use the claimed invention in its full scope.

Claim Rejections - 35 USC § 112, first paragraph—Written Description

Claims 12, 16-28 and 30-43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims recite treatment of different gamete chromosomal abnormalities in males with FSH “variants” in the alternative. The specification briefly discusses some

examples of FSH variants at pages 10-11, primarily CTP-FSH and rFSH. Nevertheless, FSH variant is broadly defined in the specification as encompassing "those molecules differing in amino acid sequence, glycosylation pattern or inter-subunit linkage from human FSH but exhibiting FSH-activity. The literature discloses many FSH variants characterized by some FSH activity that nevertheless act as antagonists of FSH. For example, Timossi et al. (Neuroendocrinology. 1998; 67: 153-63) teach in their abstract that, "[it] is well known that deglycosylation of gonadotropins by enzymatic or chemical procedures or by deletion of sites for N-linked glycosylation produces antagonistic analogs which are able to interact strongly with the receptor and to inhibit binding of the wild-type hormone." Barrios-De-Tomasi et al. (Mol and Cell Endocrinol. 2002; 186: 180-198) teach an isoform of FSH that "exhibited antagonistic effects on FSH action." (See p. 192, left column, 2nd paragraph). U.S. Patent No. 5,883,073 (Boime et al.) discloses how to make single chain FSH variants with antagonist activities. The specification fails to provide a structure to function correlation between how the FSH variants can vary and maintain FSH agonist activity.

To provide evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of compete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. There is not even identification of any particular portion of the structure that must be

conserved. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

With the exception of CTP-FSH and rFSH, the skilled artisan cannot envision the detailed chemical structure of the encompassed variants, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, only isolated FSH variants wherein said FSH variants are either CTP-FSH or rFSH, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12, 16, 17, 19-27, 30-33, 35-39 and 41-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Acosta et al. (Fertil Steril. 1991; 55: 1150-6—of record) as evidenced by Moeman et al. (Andrologia, 2008; 40: 381-386). Applicants amended independent claim 12 to recite, "wherein the gamete numerical chromosomal alteration is XX or YY disomy." Moeman et al. provides evidence that males with oligoasthenoteratozoospermia have a higher incidence of "XX disomy," as well as aneuploidy and diploidy, discussed in greater detail below. New claims 31-33 and 35-39 encompass treatment of any gamete chromosomal alterations with FSH. It should be note here that MPEP 2131.01 addresses the use of more than one reference in making 35 U.S.C. 102 Rejections:

A 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to:

(A) Prove the primary reference contains an "enabled disclosure; "
(B) Explain the meaning of a term used in the primary reference; or
(C) Show that a characteristic not disclosed in the reference is inherent.

In the instant case the supplementary reference by Moeman is used to show that XX disomy is a characteristic inherent in Acosta et al., and thus for reason (C). In addition, note that MPEP 2131.01 (III), also states that the critical date of extrinsic evidence showing a universal fact such as the inherency of XX disomy occurring in males identified as having a severe form of infertility characterized by low sperm density, motility and abnormal morphology need not antedate the filing date.

Acosta et al. teach treatment of infertile males with pure FSH at a dose of 150 IU three times a week for 3 months with the result that six healthy, full-term pregnancies were achieved (see abstract; p. 1151, right column, last full paragraph; p. 1154, right column, penultimate paragraph; p. 1155, right column, 4th paragraph). Regarding claims 30-33, 35-39 and 41-43, which recite the step of diagnosing a male as having gamete numerical chromosomal alterations, the specification discloses diagnosis of oligozoospermia, asthenozoospermia, teratozoospermia and oligoastenoteratozoospermia at pages 6 and 7. Acosta et al. teach a patient population in which sperm concentration, motility and morphology were impaired (see p. 1151, right column, 3rd paragraph), thus representing a population of males with oligoasthenoteratozoospermia or OAT, which is defined in the specification at p. 7, lines 4-8 as the combination of low sperm concentration, motility and abnormal morphology. In other words Acosta et al. teach a population of men in which sperm parameters were

measured to diagnose infertility. Furthermore, Acosta et al. meet the exact limitations of the dose of FSH (between 75-300 IU/dose or 150 IU/dose) and frequency of administration (i.e., three times a week or every other day) at p. 1151, right column, last full paragraph). Acosta et al. conclude that "there is a group of infertile male patients with inability to fertilize oocytes in the human in vitro system, represented mainly by severe abnormal morphology or a combination of abnormal parameters as previously defined, who can be helped by systemic treatment with pure FSH before IVF/ET."

Although Acosta et al. are silent with respect to the patients having or being diagnosed with "gamete numerical chromosomal alterations," they do clearly discuss diagnosis of infertility using sperm parameters that are defined in the literature and in the specification. Further, Moeman et al. provide evidence that OAT patients have increased levels of XX disomy (as well as XY disomy)—see for example, Table I, p. 383; p. 384, left column, 1st paragraph). In addition, Moeman et al. report evidence that there is increased diploidy in OAT patients (see p. 384, left column, 2nd and 3rd paragraphs) as well as aneuploidy (see for example, p. 384, left column, 4th paragraph). In other words, males with OAT have a higher rate of gamete chromosomal disomy, aneuploidy and diploidy in spermatozoa, which is to say a higher rate of "gamete numerical chromosomal alterations." Since Acosta et al. teach the treatment of infertile males (OAT) with FSH, and Moeman et al. provide evidence that OAT patients have an increased frequency of chromosomal disomy, aneuploidy and diploidy in their spermatozoa, it is evident that Accosta et al. are administering the same compound to the same patient population, and furthermore, are doing so successfully. Acosta et al.

diagnosed patients as infertile using sperm parameters, thus they recognized that they were using FSH to treat infertility that resulted in abnormal sperm parameters.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 18 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acosta et al. (cited above—of record) and as applied to claims 12, 16, 17, 19-27, 30-33, 35-39 and 41-43 above and further in view of Loumaye et al. (Hum Reprod Update. 1995; 1: 188-99).

The first issue that must be examined when considering obviousness is to determine the scope and contents of the prior art. The discussion in the preceding rejection of how Acosta et al. meet the limitations of the claims and how the new

limitations are inherent to Acosta et al. as evidenced by Moeman et al. is applicable here and is hereby incorporated. The second issue is to ascertain the differences between the prior art and the claims at issue. Acosta et al. do not teach the administration of recombinant or rFSH, which is a variant of FSH. Loumaye et al. teach how rFSH is made and that rFSH is safe and effective because it had greater purity than urinary FSH, and the authors state that rFSH will likely replace urinary FSH (see abstract; p. 189, left column, ; p. 191, right column; p 194, left column, 3rd paragraph). Given this teaching, it would be obvious to one of ordinary skill in the prior art (the POSITA) to substitute rFSH for FSH because the level of skill in the art concerning knowledge of recombinant methods for making recombinant gonadotropins is high, and given the evidence presented in Loumaye et al. that the rFSH was well tolerated, the POSITA could expect to substitute rFSH for pure FSH with a reasonable expectation of success. The final issue is to consider objective evidence present in the application indicating obviousness or nonobviousness. Nowhere in the application is a surprising or unexpected result taught with respect to administration of rFSH over and above what is taught in the prior art.

Claims 28 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acosta et al. (cited above—of record) and as applied to claims 12, 16, 17, 19-27, 30-33, 35-39 and 41-43 above and further in view of Bouloux et al. (Human Reprod. 2001, 16: 1592-1597—of record).

The first issue that must be examined when considering obviousness is to determine the scope and contents of the prior art. The discussion in the preceding rejection of how Acosta et al. meet the limitations of the claims and how the new limitations are inherent to Acosta et al. as evidenced by Moeman et al. is applicable here and is hereby incorporated. The second issue is to ascertain the differences between the prior art and the claims at issue. Acosta et al. do not teach the administration of CTP-FSH, which is a variant of FSH. Bouloux et al. teach that CTP-FSH is safe and effective because it could lead to more convenient dosing regimens (i.e., the longer half life decreases the need for frequent injections—see p. 1592, right column, and p. 1596, right column, last paragraph). Given this teaching, it would be obvious to the POSITA to substitute CTP-FSH for FSH because the level of skill in the art concerning knowledge of how to make and use CTP-FSH is high, and given the evidence presented in Bouloux et al. that the FSH-CTP was well tolerated, the POSITA could expect to substitute FSH-CTP for pure FSH with a reasonable expectation of success. The final issue is to consider objective evidence present in the application indicating obviousness or nonobviousness. Nowhere in the application is a surprising or unexpected result taught with respect to administration of FSH-CTP over and above what is taught in the prior art.

Response to Arguments

NOTE: The arguments made previously by Applicants in their Remarks filed 19 August 2009 are applicable to the previous rejections, which have now been withdrawn. Nevertheless some points made by Applicants will be addressed below.

At p. 6, 2nd paragraph Applicants argue that both Foresta et al. and Acosta et al. are silent with respect to patients having chromosomal abnormalities such as XX and YY disomy and that McInnes teaches that infertile men do not have significant differences in the frequency of XX or YY disomy compared to controls, thus it is "unclear that the patient populations treated by Acosta et al. or Foresta et al. contained individuals having XX or YY disomy. Further, the argument made at p. 7, 2nd paragraph regarding the rejection under 35 U.S.C. 103(a) over Acosta et al. and Bouloux et al. re-states the same point made above, namely that Acosta et al. and McInnes et al. do not teach differences in the frequency of XX or YY disomy.

This argument has been considered and in response to Applicants' amendment of their independent claim, Moeman et al. was introduced as extrinsic evidence to show that men with severe infertility and OAT have a significantly higher rate of both XX and XY disomy. Moeman et al. focus only on OAT patients, which the specification defines at p. 7 as those having impaired sperm motility and morphology in addition to low sperm count. By focusing on a population of males that have this severe form of oligozoospermia, the work by Moeman et al. can more carefully distinguish between the varying types and degrees of male infertility, which previous work had not done. Acosta et al. disclose patients having the same level of extreme male infertility characterized by low sperm concentration, impaired motility and abnormal morphology that was taught in Moeman et al. (See p. 1151, 3rd paragraph of Acosta et al). In summary, it is clear that the patient population in Acosta et al. overlap with the patient population recited in the claims. Finally, since there are no current rejections over Foresta et al., the arguments regarding this reference are moot.

At p. 6, 3rd paragraph, Applicants argue that the terms such as “about” must be given reasonable scope.

This argument is moot, as Acosta et al. teach the exact limitations as recited in the claims. Nevertheless, the fact that the specification teaches a range of doses (and a range of doses is recited in several claims), it is clear that the Office gave reasonable scope to the term "about" in the instant case.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Borgeest whose telephone number is (571)272-4482. The examiner can normally be reached on 9:00am - 3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on 571-272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christina Borgeest

/Bridget E Bunner/
Primary Examiner, Art Unit 1647